

TO: Chuck Klose

FROM: R. W. Sniffin

SUBJECT: Minutes of the 34-m BWG Ka-band Upgrades Task – DSS-34 Downtime Readiness Review

The Review was convened on January 24, 2005 at 1:05 P.M. in the JPL Building 171 Public Conference Room, 187-218. In attendance were:

Review Board:

Eugene Burke, Board Chair, representing RAPSO
Dennis Buck, representing Office 923
Jim Buckley for Allan Berman, representing Office 921
Charles Klose, representing Office 924
Michael Coluzzi, representing O&M Contractor (ITT)
Jean Patterson, representing Division 33
Ed Kruzins, representing CDSCC System Engineering (via telecon)
John Murray, representing CDSCC Antenna & Microwave Engineering (via telecon)
Fred Battle, DSMS Safety Engineer

Presenters:

Watt Veruttipong, Task Manager
Chau Buu, Sherill Hampton, Juan Lezameta, Chris Link, Jan Loreman, Asim Sehic, Bob Sniffin, John Sosnowski

Guests:

Art Andujo (ITT), John Cucchissi, Joaquin Retana (ITT)

Guests via telecon:

Art Landon (ITT), Manny Loria (ITT), Des McNicholas (CDSCC)

Gene Burke presented the review board responsibilities, review purpose and objectives, review timing and entry criteria, and success criteria.

Watt Veruttipong presented the task overview.

Bob Sniffin presented a list of engineering change orders (ECOs) that are needed to support the downtime activities but were processed independently of the present task deliveries (Slide 10). There was a discussion as to why the ECO for the FSP cables was unknown and it was explained that the ECO originator, Les White, believes he wrote it against a different ECR but could not locate it in time for the presentation. If he cannot find it, he will write a new ECO.

John Sosnowski presented the status of the microwave feed equipment ECOs that have recently arrived at the complex. Manny Loria asked if anything was missing from the mod kits. John Murray of CDSCC reported that everything listed on the shipper had arrived.

Chris Link presented the status of the microwave support equipment, control equipment and software ECOs. He reported that it has been decided to provide additional on-site software training in accordance with the RDD and that this training would occur before the DSMS Delivery Review (DDR), probably in March. Watt stated that the DDR has not been scheduled. Manny reported that the Aperture Load Motor software mod kits arrived at the DSN Logistics Facility (DLF) today.

Jan Loreman presented the status of the Low Noise Amplifier (LNA) equipment and software ECOs. He said that neither he nor Manny had been able to find the Software Transfer Agreement (SWTA) although the software has been delivered and installed at both DSS-26 and DSS-55. A new SWTA will be generated by the end of the week if previous documentation can't be found. A concern was expressed that the Meskit for ECO 110.202 may be delayed because some shipping companies are unwilling to transport Helium believing it may be hazardous. Jan said this problem has been experienced in the past and has always been dealt with successfully.

Chau Buu presented the status of the Downlink Tracking and Telemetry equipment ECOs. There was no significant discussion.

Juan Lezameta presented the status of the Exciter equipment ECOs. Manny Loria reported that the mod kits were shipped from DLF last week. CDSCC reported that a shipment has arrived in Sydney that may contain these kits but the notice of receipt does not contain an ECO number. Gene Burke asked when the training materials would be completed and Juan said by March 15th – before he leaves for CDSCC to conduct the training.

Asim Sehic presented the status of the antenna facility equipment ECOs. John Murray reported that the shroud modification mod kit is expected on site at 10:00 A.M. today. Manny reported that the hardware for the Waveguide Cooling Skid modification (ECO 106.401C) arrived at DLF last Friday but it probably will not arrive at the station by February 1st. CDSCC asked if the installation could operate without this modification and John Sosnowski confirmed that it could. CDSCC also reported they had heard that new pumps require 3-phase power rather than the single phase used by the existing pumps. Asim confirmed this and volunteered to accept an action item to determine that this portion of the change is properly documented. There was a discussion about the plug and socket for the Sumitomo® compressor being compatible. Jan Loreman reported that the plug in his mod kit is the higher current capability design and will be compatible with the socket installed by the station.

John Sosnowski presented the plan for installation, integration and test. John Cucchissi asked if the idler wheel bearings had been delivered. CDSCC reported they were not on site. The discussion centered on Tim Sink's involvement and that he has ordered the bearings from a U.S. supplier. However, the task will only be performed if it can be done without interference to the

Ka-band Upgrades implementation. The idler wheel bearing replacement has lost some of its urgency because the particle count in the oil has stabilized.

Gene Burke asked about antenna painting and CDSCC reported that painting will be limited to touching up areas affected by this implementation.

There was a discussion about baseline tests. CDSCC wanted to know if antenna time has been scheduled for them. It apparently has not. John Sosnowski volunteered to talk with Manuel Franco (who will be conducting the tests) about this. One of the tests involves determining the coincidence of the S- and X-band antenna beams. Manuel will be on site for this test and will return to the site for the antenna calibration tests following installation. In response to a question by Mike Coluzzi, John Sosnowski reported that any S- and X-band beam divergence will be corrected by adjustment of the S/X-band Dichroic Plate.

There was a wide-ranging discussion about the schedule. This discussion included comments about the content of the review – whether non-interference tasks such as the idler bearing replacement should be included in the review. The consensus seemed to be that it should not because it was not under the control of the Task. Other points were that estimates should have been included for things like ramp tests and baseline tests and that overlapping activities were not made clear by the task-duration presentation form of the schedule. Mention was made of the possible impact of the 4th-order pointing model implementation that may need to be coordinated with this downtime. It was noted several times that there is insufficient test time in the schedule and that the Australian holiday schedule was not considered when the downtime was originally requested. As a result the Task has already initiated a request for a two-week downtime extension and it is believed this will accommodate the eight days we seem to be short with some slack. Art Landon said that the demo tracks may need to be spread across a greater period than five days because of difficulty scheduling Project participation. He also asked if Cassini would be supportive of a request before the 4th-order pointing model was installed and Dennis Buck assured him that Cassini would like us to get as much Ka-band experience as possible.

Sherill Hampton presented the SPT and Project-involved Test plan. The discussion on scheduling continued. It was observed that Sherill's estimate of 116 hours exceeded both the 5 days allocated in John's original schedule and the 10 days that were used in the previous discussion about the schedule extension. It was suggested that S-band testing be delayed until the end of the test period and possibly eliminated if time was not available. CDSCC believes at least some S-band testing should be performed. CDSCC asked if an Operations Test Plan (OTP) was to be written and Sherill said it was not planned at the present. There was a brief discussion about the use of a generic OTP and Mike Coluzzi volunteered to investigate its status.

This concluded the review presentation. Gene Burke asked if there were any general comments prior to the board discussion. Ed Kruzins said that we would be in good shape if we got from 5 days to 2 weeks additional time. He reminded us that NOAA-N launch is in the downtime period but it may slip. In either case, he believes the station can accommodate the workload and he believes preparations for the downtime at CDSCC are going well. Gene accepted these comments as Ed's closing remarks. Additional comments from CDSCC included stressing the

need to characterize S-band performance and to have all mod kits on site by 2/1/05 although they recognize that the waveguide cooling modification is unlikely to make this date.

Dennis Buck stated that the Task seemed ready for the downtime but the schedule does not support the task. He recommended we not start the task if we don't get the 2-week extension.

Jim Buckley stated that he was not sure the detailed schedule is credible without the downtime extension. He said he had 4 concerns that he believed warranted an RFA. They were: The need to complete the SWTA for the LNA Instrumentation Software by the end of the week, the need to be certain that the correct power is available for the waveguide cooling modification, issues relating to an OTP, and the need for an Operations Commitment Review (OCR) prior to the return to service.

Chuck Klose stated we need the extension. He also said the Operations [test] Plan should include pre-downtime activities and stressed the need for close monitoring of activities during the downtime to ensure we remain on schedule.

Mike Coluzzi said he believes we should include S-band testing and that we need a plan for the idler wheel bearing replacement.

Jean Patterson said she shares the concern of the board over the schedule and that the Task must carefully track the delivery of the remaining ECOs.

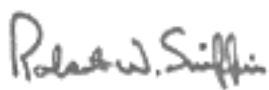
Fred Battle recommended we provide lessons learned about the Sumitomo® compressor power cord to Australia. Jan Loreman said this would be done. The problem was a bad recommendation from Sumitomo.

Gene Burke asked Bob Sniffin to accept an action item to follow-up on the FSP system cables. He stated his concern about the 4th-order pointing model and advised the attendees that the reason the DSS-34 Ka-band implementation had been advanced to February was so that DSS-34 could offer best-efforts Ka-band support to Cassini. Finally, he expects the additional time will be made available as the Projects are usually supportive of such requests.

Gene thanked the presenters and the review was ended at 3:07 P.M.

Six written Recommendation for Action (RFA) forms were received. Three additional RFAs will be created from these minutes.

Respectfully submitted:



Robert Sniffin, secretary
34-m BWG Ka-band Upgrades Task DSS-34 DTRR